Aircraft Maintenance Technician (AMT) 40 O&P Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- **Practice answering questions under realistic conditions,**
- **Improve accuracy and speed,**
- **Review explanations to strengthen weak areas, and**
- **Approach the exam with greater confidence.**

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here’s how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don’t just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There’s no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

1. What condition is indicated if the yellow disk is missing in a fire extinguishing system?

A. The system has been discharged normally.

B. The disk was never installed.

C. The system is brand new.

D. The disk is missing but status unknown.

2. What are the most common causes for delamination of a composite structure?

A. Sonic vibration, expansion of internal moisture, liquid leakage, and a manufacturing error.

B. Exposure to ultraviolet light only.

C. Overheating resin during cure.

D. Impact damage not related to manufacturing.

3. What is the purpose of the selvage edge on a roll of fabric?

A. It prevents the fabric from unraveling

B. It provides color

C. It marks the fabric's price

D. It strengthens the center

4. Which device is used to prevent a cable from rubbing on aircraft structure?

A. Fairlead

B. Pulley

C. Lubricator

D. Sheave

5. Splices to a wood spar are prohibited under which locations?

A. Under an attachment fitting for the wing root, landing gear, engine-mount, lift, or inter-plane strut

B. At the wing tip

C. Near the tailplane

D. In the center of the wing

6. Name two types of smoke detection systems used in aircraft.

A. Light refraction types and ionization types

B. Ionization types and heat detectors

C. Light refraction types and infrared types

D. Optical fiber and thermal expansion types

7. Name three mechanical methods by which flight control systems may be actuated.

A. Cables, push-pull rods, and torque tubes.

B. Pneumatic cylinders and servo motors

C. Hydraulic pistons and electric motors

D. Electronic actuators only

8. Describe an acceptable repair method for elongated bolt holes found in a wooden wing spar.

A. Remove the section containing the elongated hole(s) and splice in a new section

B. Fill with epoxy and drill new holes

C. Use a backing plate and longer bolts

D. Ignore and continue use

9. Which fire detection system uses a continuous loop whose electrical resistance changes with temperature along the loop?

A. Fenwal double-loop system.

B. Lindberg gas-tube system.

C. Kidde continuous loop fire detection system.

D. Photoelectric smoke detector.

10. Fabric is considered unairworthy when it has deteriorated to what percentage of its original strength?

A. 60%

B. 65%

C. Less than 70%

D. 75%

Answers

1. A
2. A
3. A
4. A
5. A
6. A
7. A
8. A
9. C
10. C

Explanations

1. What condition is indicated if the yellow disk is missing in a fire extinguishing system?

A. The system has been discharged normally.

B. The disk was never installed.

C. The system is brand new.

D. The disk is missing but status unknown.

The yellow disk acts as a discharge indicator in many aircraft fire-extinguishing bottle assemblies. It sits in place while the system is charged and ready. When the system is actuated and discharges, the cartridge or mechanism blows the disk out, so it ends up missing. Therefore, if the yellow disk is not present, it indicates the system has already discharged in normal operation. After discharge, the bottle and system require inspection, recharging or replacement, and re-certification as dictated by the maintenance manual.

2. What are the most common causes for delamination of a composite structure?

A. Sonic vibration, expansion of internal moisture, liquid leakage, and a manufacturing error.

B. Exposure to ultraviolet light only.

C. Overheating resin during cure.

D. Impact damage not related to manufacturing.

Delamination happens when the bond between the layers of a composite fails and the plies separate under load. The most common culprits are factors that repeatedly stress or weaken those interlaminar bonds in service or during production. Sonic vibration introduces cyclic interlaminar shear stresses that can crack the interfaces and propagate delamination under flight loads and engine/vibration environments. Internal moisture expansion causes the resin matrix to swell; this moisture-related swelling creates differential strains at the ply interfaces, promoting debonding and crack growth. Liquid leakage can carry chemicals that attack the adhesive or resin at the interfaces and can plasticize or weaken the matrix, reducing interlaminar strength and allowing layers to separate. Manufacturing errors, including voids, improper resin wet-out, misalignment, or incomplete curing, leave weak spots and residual stresses that predispose a laminate to delaminate when it experiences normal service loads or temperature changes. Ultraviolet light mainly affects surface resin properties and is not a primary driver of through-thickness delamination in typical aerospace composites. Overheating resin during cure can cause curing defects and residual stresses, but it is not as common a root cause as moisture-related effects, vibroacoustic loading, liquid exposure, and manufacturing defects. Impact damage is a known cause, but the option describing multiple interrelated factors (vibration, moisture expansion, liquid leakage, and manufacturing error) best captures the most frequent ways delamination initiates and propagates.

3. What is the purpose of the selvage edge on a roll of fabric?

A. It prevents the fabric from unraveling

B. It provides color

C. It marks the fabric's price

D. It strengthens the center

The selvage edge is the finished border that runs along the length of the fabric as it comes off the loom. Its main job is to lock the warp threads at the edge so the fabric won't unravel or fray as it's handled, rolled, cut, and sewn. This stability helps maintain the fabric's width and grain during production and use. It isn't about adding color, marking price, or strengthening the center of the fabric—those come from other aspects of the fabric and its processing. So the primary purpose is to prevent unraveling.

4. Which device is used to prevent a cable from rubbing on aircraft structure?

A. Fairlead

B. Pulley

C. Lubricator

D. Sheave

The main idea is guiding a cable so it doesn't rub against aircraft surfaces. A fairlead is the device designed for this purpose: it provides a smooth, directed path for the cable as it passes by structure, preventing contact with sharp edges and controlling the bend radius to stop wear and fraying. A pulley or a sheave, while used to change direction and reduce friction over a wheel, centers on the wheel itself and the load it carries, not on keeping the cable off the structure. A lubricator's job is to reduce friction by applying lubricant, not to physically guide the cable away from the surface. So the fairlead is the correct choice because it specifically prevents rubbing by guiding the cable.

5. Splices to a wood spar are prohibited under which locations?

A. Under an attachment fitting for the wing root, landing gear, engine-mount, lift, or inter-plane strut

B. At the wing tip

C. Near the tailplane

D. In the center of the wing

The main point is that wood spars carry significant bending and shear loads, and adding a splice in the stressed area creates a weak point where failure is more likely under load. Splices weaken the continuity of the spar's grain and can introduce misalignment, moisture traps, and fastener issues, all of which reduce strength where loads are being transferred. Under an attachment fitting for the wing root, landing gear, engine mount, lift, or inter-plane strut is a critical region because the fitting transmits large forces directly through the spar. If a splice were placed there, the splice would be subjected to the same high stresses as the rest of the spar but with a potential mismatch and discontinuity at the joint, increasing the risk of failure. Locations such as the wing tip, near the tailplane, or in the center of the wing do not inherently involve the same concentrated loads from a heavy fitting, so the prohibition does not apply in the same way. The key idea is that splices are avoided where fittings impose large, concentrated loads, which is why the stated locations with attachment fittings are prohibited.

6. Name two types of smoke detection systems used in aircraft.

A. Light refraction types and ionization types

B. Ionization types and heat detectors

C. Light refraction types and infrared types

D. Optical fiber and thermal expansion types

Smoke detection on aircraft relies on two common technologies: optical (light-scatter) detectors and ionization detectors. An optical detector uses a light beam in a chamber and watches for smoke particles that scatter or refract the light into a sensor, triggering an alarm when smoke is present. An ionization detector contains a small radioactive source that creates a continuous ion current between electrodes; when smoke enters the chamber, the current is disrupted and the alarm sounds. These two types cover different fire signatures and together provide reliable early warning in enclosed aircraft spaces. Other detector types like heat sensors or flame-focused infrared detectors do not respond to smoke in the same way, and terms like optical fiber or thermal expansion aren't standard smoke-detection technologies in aircraft.

7. Name three mechanical methods by which flight control systems may be actuated.

A. Cables, push-pull rods, and torque tubes.

B. Pneumatic cylinders and servo motors

C. Hydraulic pistons and electric motors

D. Electronic actuators only

Actuation by mechanical linkages means moving a control surface solely through physical connections that transmit force from the pilot's input, without using fluid power or electric motors. The three classic mechanical methods are cables, push-pull rods, and torque tubes. Cables run from the cockpit controls to the control surfaces, routing through pulleys and fairleads. When you pull or release the control, the tension in the cable moves the surface. They're lightweight and simple but require careful tensioning and regular maintenance to prevent slack, wear, or stretch affecting control feel. Push-pull rods are rigid tubes with an inner rod that can push or pull. They provide a direct, stiff transmission over relatively short distances, giving precise and predictable movement with minimal flex. They're well-suited where crisp control response is needed and the geometry allows a straight path. Torque tubes are shafts that rotate to carry the pilot's input along a wing or tail axis, often connected to bellcranks or other linkages that convert rotation into the desired surface deflection. This setup keeps motion organized over longer spans and maintains synchronized movement between surfaces. The other options involve fluid power or electric actuation (pneumatic cylinders, hydraulic pistons, electric motors, or electronic actuators). Those are not purely mechanical linkages, so they aren't the three mechanical methods described here.

8. Describe an acceptable repair method for elongated bolt holes found in a wooden wing spar.

A. Remove the section containing the elongated hole(s) and splice in a new section

B. Fill with epoxy and drill new holes

C. Use a backing plate and longer bolts

D. Ignore and continue use

When a wooden wing spar has elongated bolt holes, the strength and load path are compromised where the material around the holes has been weakened. The proper approach is to restore the spar by removing the damaged section and splicing in a new, solid section. This returns the bolt holes to fresh, intact wood with the correct geometry, reestablishes the original cross-section, and preserves the correct grain continuity so the load is carried as designed. Drilling new holes or filling the holes with epoxy doesn't restore the removed material or the proper load-carrying capacity of the spar; it leaves weakened regions and potential stress concentrations that can lead to fatigue or failure. Using a backing plate and longer bolts also doesn't address the weakened area and can alter load paths or introduce new failure modes. Ignoring the damage is unsafe. So, replacing the compromised region with a splice maintains structural integrity by re-establishing proper dimensions, fastener alignment, and material strength.

9. Which fire detection system uses a continuous loop whose electrical resistance changes with temperature along the loop?

A. Fenwal double-loop system.

B. Lindberg gas-tube system.

C. Kidde continuous loop fire detection system.

D. Photoelectric smoke detector.

In a continuous loop fire detection system, the sensing element is laid out along the area to be protected as a long loop. The loop's electrical resistance changes with temperature along its length. The fire detection electronics continuously monitor that loop impedance; when heat from a fire raises the temperature enough, the resistance crosses a preset threshold and an alarm is triggered. This design allows the detector to sense heat anywhere along the loop's path, providing broad coverage with a single continuous sensing element. This matches a Kidde continuous loop fire detection system, which is built around a resistive, temperature-responsive loop. Other options don't fit the description: a gas-tube system relies on a pressure-change mechanism in a gas-filled tube, not a resistance-changing loop; a photoelectric smoke detector uses optical sensing rather than a resistive loop; a Fenwal double-loop system uses two separate loops for redundancy rather than the single continuous loop whose resistance changes with temperature along its length.

10. Fabric is considered unairworthy when it has deteriorated to what percentage of its original strength?

A. 60%

B. 65%

C. Less than 70%

D. 75%

Fabric coverings must retain enough strength to safely carry flight loads. The airworthiness standard uses a 70% threshold of the original tensile strength as the cutoff. If the fabric's current strength falls below 70% of what a new fabric would have, it no longer provides the required safety margin and is considered unairworthy. So, when the fabric deteriorates to less than 70% of its original strength, it must be replaced. A value like 75% would still meet the requirement, while 60% or 65% would already be below the threshold, underscoring why the correct criterion is "less than 70%."

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

https://amt40oandp.examzify.com

We wish you the very best on your exam journey. You've got this!